

Voice over Internet Protocol (VoIP) operations are utilized to substitute for the allocation of voice trunks in a conventional telecommunications network during intersystem handoff operations. A pair of VoIP gateways are in electronic communication with mobile switching centers. The VoIP gateways are connected by an Internet Protocol network. A determination is made that a handoff forward call connection operation should occur. A second VoIP gateway is allocated to the Target MSC, while a first VoIP gateway is allocated to the Serving MSC. A voice path is then completed using voice channels between the VoIP gateways and the MSCs, to allow the mobile station communication to be handed off from the Serving MSC to the Target MSC. Formatting and recovery of the voice audio signals occurs within the VoIP gateways as they are sent to and received from, respectively, the MSCs.